

Advancing Women In Leadership

How Do Junior Faculty Compete for Research Dollars? Implications for Women

Patricia Boyer

University of Missouri-St. Louis

Introduction

Institutions of higher learning are currently encountering numerous financial problems. These problems present several dilemmas for faculty such as questions concerning their workload and the demand for more accountability of how their time is spent. Women and junior faculty are the two groups most negatively affected by the demand for greater productivity and the demand for accountability (Meyer, 1998). One approach to handling this financial crisis is for faculty to seek external funds to support their research projects. Limited research dollars are available so faculty must be skillful in how to acquire them and must be aggressive when competing for them. Acquiring and competing for these limited funds are important issues to faculty because tenure and promotion decisions are based on successful research.

Background

Research showed that women faculty members' research interests and agenda differ from that of their male counterparts. Women do not publish their research to the same degree as men (Bellas & Toutkoushian, 1999; Harper, Baldwin, Gansneder, & Chronister, 2001; Schneider, 1998; Tesch, Wood, Helwig, & Nattinger, 1995) and married women publish even less than unmarried women (Bellas & Toutkoushian, 1999). There are many views in the literature that attempt to explain why differences exist between men and women faculty concerning their research agenda. Bentley (1990) explained one such view by saying that there are gender differences in faculty seeking grants and publishing manuscripts. Bentley was uncertain as to why these differences exist, but suggested that they are due to the fact that women are not concentrated in research institutions. Therefore, if they are not at research institutions, they are less likely to have grants funded (Bentley, 1990). Bellas and Toutkoushian (1999) indicated that women faculty who conduct research may work at a slightly slower pace, spend more time on research, feel less confident about it, and take more care with it than men faculty. Kovar (1985) stated that women in higher education are stereotyped as less scholarly, less serious, and less interested in research than their male counterparts. Also, some researchers claim that attributes of successful researchers

are independence, assertiveness, and confidence, and traditionally women do not possess these attributes (Harper et al., 2001).

Another view concerning gender differences in faculty research was described by Keim and Erickson (as cited by Harper et al., 2001). They stated that,

Women are less likely to receive support for their research efforts because their work is often seen as less valuable. They claim that despite supposedly blind review processes, gender bias on the part of reviewers still exists, resulting in higher rejection rates for women. These obstacles, coupled with a greater tendency to abandon articles that have been rejected for publication rather than resubmit them, contributes to lower publication rates. (p. 250-251)

In research conducted by Schneider (1998), women faculty were asked their perceptions about, "Why don't women publish as much as men?" The findings of his research provided insights into how women faculty perceived this issue:

Some blame inequity in academe [and] others say quantity doesn't matter...There are women who publish a lot, but somehow they get overlooked....The statistics measure quantity, not quality....The academics who study faculty productivity typically ignore the humanities, where women abound....Once in graduate school, women complain, they have a tougher time finding senior scholars to be mentors....[And finally,] trying to figure out why women write less than men is like searching for a smoking gun on a firing range. There is no single cause." (p. 1-7)

Conceptual Framework

The framework for the present study was based on previous research of tenured and untenured women faculty at colleges of education of Association of American University institutions (Boyer & Cockriel, 1999, 1998). Specifically, the findings of this research revealed that women faculty lacked the necessary training to pursue grants and were unaware of how to initiate the process. Subsequently, this lack led to women faculty submitting fewer grant proposals which ultimately affected their success in securing promotion and tenure. The findings also showed that graduate programs and academic administrators would do well to develop programs that provide graduate students and junior faculty the necessary skills to successfully compete for grant dollars.

Despite previous research, little is known about factors that influence women and junior faculty's pursuit of external grant funding across academic disciplines. This is important since there is evidence that faculty in the hard sciences spend more time writing grant proposals than teaching (Fairweather, 1993; Smart & Elton, 1982; Somers et al., 1998) because they have more research funds readily available to them (Creswell & Bean, 1981; Somers et al., 1998). Inquiry into this area of research will provide evidence about whether findings of earlier research within colleges of education are relevant to the experiences of women junior faculty across academic disciplines. Furthermore, since researchers contend that women do not publish as much as men, it is necessary to understand the factors that both motivate and hinder women's success in pursuing external grant dollars.

As suggested by Johnsrud and Wunsch (1991), research is needed to understand how women faculty, especially junior faculty, overcome barriers and become successful in academia. Therefore, the purpose of the present study is to examine both motivating and hindering factors that influence women junior faculty's pursuit of external grant dollars across academic disciplines. This research addresses the question, "Are there any differences in the factors that motivate and hinder female junior faculty at a Midwestern Research I university in the pursuit of grants across academic disciplines compared with their male counterparts?" Additionally, junior faculty were asked about the type of grant-seeking training they received prior to their academic appointment. It is important to note that, for this research, the pursuit of grants is defined as a workload

activity that falls under the umbrella of research.

Procedures and Measures

Measures. The questions were designed around a four-point Likert scale that consisted of the categories (a) very important, (b) moderately important, (c) marginally important, and (d) not important. The four-point scale was dichotomized into two categories for ease of comparison. Therefore, very important and moderately important responses were combined to reflect the motivators and barriers that were important to faculty in their pursuit of grants. Similarly, marginally important and not important responses were combined to reflect the motivators and barriers that were not important to faculty in their pursuit of grants. Motivating factors included variables such as having personnel support when proposals were funded, having travel money for conferences, and having contact with funding sources (see Table 1 for the complete list). Also, barriers included variables such as unlikely chance of getting funded, pursuing grants being too time consuming, and too many committee assignments (see Table 2 for the complete list).

Data analyses. Chi square tests of independence were used to analyze the data with the SAS statistical package. The sample was designed to have an alpha level of $p < 0.05$.

Results

This research project is an effort to better understand factors influencing women junior faculty engaged in grant proposal submission, but specifically to determine if there are gender differences for these faculty. The findings of this research discovered that the top three motivating factors (opportunity to research new information, consideration in tenure or promotion decisions, and building professional reputation as a researcher) and the top barrier (heavy teaching load) were the same for both men and women junior faculty. Significant gender differences were evident in two motivating factors; more flexibility in how time is allocated, and contact with funding sources. Also, gender differences were evident in two hindering factors; inadequate support available to submit a grant in a timely manner, and lack of clarity in the college's expectation. The results of this research suggest that administrators should be willing to mentor, and also make training sessions available for women who are new to the grant process.

Kovar's (1985) research uncovered inequities in the academy favor male faculty compared to their female counterparts. Specifically, she argued that the scales for determining tenure are tilted to favor male faculty members. However, Kovar also found that women faculty, despite the stereotypes, were interested in conducting research, publishing, becoming independent scholars, and being committed to each other. Women were more likely than male faculty to attend seminars to improve communication skills to improve teaching. On the other hand, male faculty members published more articles in non-refereed journals, received significantly more reductions in teaching loads to do research, developed more sources of funding for continued research, and attended more seminars designed to improve advising.

A list of all junior faculty members from a university was obtained from the graduate school and their addresses were obtained from the campus faculty directory. The college of education faculty was excluded from the list because previous research was conducted with this group. Junior faculty in all disciplines at the institution were sent a cover letter and the questionnaire via campus mail. Procedures recommended by Dillman (1978), with some modifications, were used to mail and to follow-up with faculty. Approximately thirty days after the initial mailing, a follow-up letter was sent via email as a reminder. After three weeks, a third follow-up letter was sent to all prospective participants via email with a copy of the questionnaire attached.

The purpose of this research is to determine factors that motivate and/or hinder female junior faculty at a Midwestern Research I university in their attempt to secure external grant funds compared with their male counterparts. The survey was sent to 205 junior members of the

faculty via campus mail, and useable responses were received from 137 (67%) faculty. Of the junior faculty responding to the survey, 85 (62%) were men and 52 (38%) were women. The academic disciplines were categorized into five areas and respondents were as follows: behavioral sciences, 11 (8.1%); biological sciences, 47 (34.8%); humanities, 16 (11.9%); physical sciences, 30 (22.2%); and social sciences 31 (23%) excluding education.

One finding of this research indicated that the motivating variables, which included opportunity to research new information, consideration in tenure or promotion, building professional reputation as a researcher, and personnel support when proposals are funded, were important to the majority of women faculty members responding to the survey. Of the fifteen motivating factors presented in this survey, thirteen of them were important for women faculty. Moreover, ten out of the fifteen variables were important for the men. The variables that were important for both groups were so for more than 50% of the respondents (see Table 1). The significant motivating factors with gender differences using a Chi Square test were: more flexibility in how time is allocated ($\chi^2 = 10.248, p = .017$) and contact with funding sources ($\chi^2 = 12.465, p = .006$).

Another finding of this research was that the most important hindering factor was heavy teaching loads for both female and male junior faculty (67% for women respondents and 56% for men respondents). The next important hindering factor was lack of knowledge of funding sources as stated by 52% of the women and 46% of the men. The significant hindering factors with gender differences using a Chi Square test were: inadequate support to submit a grant in a timely manner ($\chi^2 = 9.352, p = .025$) and lack of clarity in the college's expectations ($\chi^2 = 9.086, p = .020$) (see Table 2).

The survey also consisted of three questions, two of which were open-ended. The questions were an attempt to better understand the type of training junior faculty received, if any, prior to their academic appointment. The three questions were (a) Do you feel that you have been adequately trained to pursue grants? (b) Why or why not? Please explain. And (c) What would you suggest to the university to make sure that assistant professors are adequately trained in pursuing grants?

In response to the question, "What would you suggest to the university...," the most prevalent responses were "to mentor junior faculty," "[to] offer more grant writing seminars and or workshops," and "to offer workshops on budget preparation and how to locate funding sources." Three times as many men as women respondents stated that mentoring of junior faculty was important. Two times as many men as women stated that the university should offer workshops on budget preparation and how to locate funding sources.

This research project was an effort to further understand factors associated with grant proposal writing among junior faculty across multiple academic disciplines at a Midwestern Research I university. A second purpose was to determine whether there were gender differences among junior faculty who engaged in grant proposal writing. Previous research conducted by Monahan (1992) pointed out that women faculty members were more apt to emphasize the need for technical assistance in searching for grant opportunities, writing proposals, preparing budgets, and obtaining administrative signatures. These factors differ from the responses of the women in this study in which thirteen of fifteen variables were important for more than 50% of the respondents (see Table 1).

Qualitative Analysis

Only 40% of the respondents answered these qualitative questions. In reference to the question, "Do you feel that you have been adequately trained to pursue grants?" the most prevalent responses from those who answered yes were that they had "some graduate preparation or post doctoral training," "good mentoring," and some were "self-trained." The respondents who answered no to these questions explained that it was due to "lack of graduate school preparation," "lack of time," and "lack of mentoring," (which was the most prevalent response).

Additionally, twice as many of the male respondents answered yes, stating that they felt they were adequately trained and mentored to pursue grants.

In this study, two times more men stated that they felt they were adequately trained and mentored to pursue grants than their female counterparts. Moreover, the men in this study submitted more proposals and had almost three times as many proposals funded as women. Also, this research showed that male junior faculty allocated more of their time conducting research than did females.

Discussion

Similarities in the findings from this research and previous research conducted by Boyer and Cockriel (1999) suggested that faculty in both studies felt that the two motivating variables, consideration in tenure or promotion and building a professional reputation were important. Although these variables were important for both males and females when securing grants, it is the female respondents who stated that they were not adequately trained or mentored to pursue grants. This deficiency of training and mentoring can negatively affect women junior faculty's success in their academic career. But why is it that the males in this study stated that they are getting the mentoring and training that is needed to be successful faculty and the females are not? This difference is evident in the number of grants submitted and funded by males. Answering this question and understanding this phenomenon is beyond the scope of this research, but requires further investigation. These findings should compel faculty and administrators to be cognizant of gender differences and to pay attention to these differences as they relate to women junior faculty in the academy and to female graduate students.

Administrators can play unique roles in assisting women junior faculty in successfully seeking external funds by providing a mentor to both junior faculty and graduate students new to the grant process and by making available and supporting training sessions in areas such as grant writing/seeking and budgeting programs. Administrators will find that mentoring and training of women junior faculty will be worth the investment to their organization.

Today, research agenda is important for tenure and post-tenure reviews at all institutional levels and no longer at research institutions alone. The question to ask is, what is required of institutions, and more specifically graduate programs, to ensure that women are adequately mentored and trained to be productive and successful in pursuing their research agenda? It behooves administrators to consider the motivating factors discussed in this research as a starting place for assisting their junior faculty, especially women, in becoming successful academicians.

The findings of this research concerning hindering factors (heavy teaching loads, too many committee assignments, and advising students) are consistent with previous research, although there were no gender differences. Furthermore, these three factors were important for more than 50% of the women respondents but only heavy teaching load was important for 56% of the male respondents (see Table 2). Consequently, consideration of women junior faculty's teaching load, student advising, and committee assignment should be monitored since they are barriers to women pursuing grants. At some institutions, female faculty tend to have more committee assignments and advise more students than male faculty. Therefore, it is not surprising to see how these factors are important barriers when pursuing grants to the women faculty at this research institution.

Research shows that prior experiences positively influence future tasks, such as the graduate work of junior faculty. It is necessary for junior faculty members to enter the academy with some basic training from their graduate work to increase their chance of 'success' in their career, which increases persistence at the institution. Grant writing is no exception to this concept. Prior experience in proposal writing preparation during graduate school encourages faculty to seek external support and also contributes to the success of that attempt as faculty members (Harris,

1985). Blackburn and Lawrence (1995) explained, "In the same way that prior publication rate was a strong predictor for current publications, so was prior proposal writing a strong predictor for grant getting" (p. 164). Golde and Dore (as cited in Austin, 2002) argued that graduate students (90%) were prepared to conduct research but the majority (62%) lacked skills in the process of securing grants.

Junior faculty must juggle multiple tasks and must integrate these tasks into their personal lives (Austin, 2002). Traditionally, women are primary caregivers in the family. For future research, other variables to consider are the marital status of faculty and the number of dependents in relationship to the effect these variables have on the research agenda of women junior faculty. Additionally, thought should be given to whether or not women junior faculty are spending the time they need and desire to conduct research and secure grants. If not, attention should be given to the barriers. To tie into this concept of how time is spent, the variable, flexibility in how time is allocated, requires further investigation. For this study, the majority of the women stated that this variable was an important motivator when pursuing grants.

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[Table 1 Motivating Factors by Gender for Junior Faculty When Pursuing Grants](#)

[Table 2 Hindering Factors by Gender for Junior Faculty When Pursuing Grants](#)

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